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imens. Such a great weight is certainly prejudicial to the scientific excellence of their specimens, crushing and jamming together in an undistinguishable mass all the tenderer portions, while all the external excellencies for which they sought could have been fully secured by the moderate pressure recommended.

To supply the weights, various heavy articles may be used, as bars of iron; a number of stones weighing from 10 to 50 lbs. each, and roped for convenience of handling, if desired; boxes filled with sand, stones, old iron; etc. The writer has half a dozen or more old fashioned scale weights, with their rings remaining, weighing 14, 28, and 56 lbs. respectively. These, with stones, he finds answer every purpose.

In preparing a package for the press, first lay down two driers, then put on a sheet with specimens, next two more driers, then another specimen sheet, and so on. The number of driers interposed between the sheets of specimens will depend on the thickness and succulence of the plants. On an average two driers are sufficient, but if the specimens are coarse and fleshy, more will be needed,—a *packet* with the driers, or even more packets in drying certain plants with thick stems, large heads, etc. If these packets should not be at hand, uniform pressure may be secured by placing thick strips or cotton batting about the edges of the package. Ringlets of cotton may be used for some of the larger headed *Compositæ*, if perfect flower specimens are derived. With a little care in adjusting the larger specimens in the package, so that the thick parts are not too much above each other, and with the use of newspaper packets, I have very rarely found it necessary to employ thick strips or cotton to secure an equable pressure. In plants containing little moisture, and in those which part with it readily—as the sedges, grasses and many of the ferns and aquatics—one drier between the specimens, after the first 24 hours, will be all then required, as it will in most of the other plants after the third day, especially if the driers are changed as directed.

For the press recommended, with weights at top, the pile should rarely be carried higher than 18 or 20 inches; if carried much beyond this point, the pile is apt to become shaky and the pressure unsteady: better start another press to hold the surplusage. It is also well not to make the various packages or sections which compose the pile too large,—not over 6 inches in thickness, the writer's are seldom over 4 inches,—as the plants dry better in small packages on account of the pressure being more evenly distributed.

§ 263. New or Little-known Ferns of the United States.

No. 5.

In the first part of the "*Ferns of North America*," when speaking of *Asplenium serratum*, I made the observation that "it can scarcely be rash to hazard the conjecture, that there are yet in the swamps and hummocks of Florida more undiscovered tropical ferns to reward the diligent explorer." I now have the pleasure of announcing a four-fold fulfilment of this prediction.

12. *Ceratopteris thalictroides*, Brongniart.—This plant, which is one of the most peculiar of Ferns, was discovered last July by Dr.

A. P. Garber, growing in the waters of Prairie Creek in South Florida. It is as truly an aquatic plant as *Pontederia* or *Sparganium*, and has been found in still or slowly-moving waters in most tropical and many sub-tropical regions. It occurs in several of the West Indies, in Mexico, New Granada and Brazil, and in Africa, Madagascar, India, Java, Hong-Kong, Australia, the Philippines, etc. The sterile frond varies from a perfectly simple leaf to one which is twice or three times pinnate; the simpler ones are floating, and are produced early in the season, and the more compound fronds come later, and are emergent. The veins are everywhere finely reticulated. The fertile fronds have very numerous linear, or somewhat pod-like, segments, with the margin reflexed to form a broad and continuous membranaceous involucre. The sporangia are scattered on the backs of the veins, and are sub-globose in form, and are more variable in respect to the ring than any other fern. This organ is sometimes entirely lacking, at other times it is composed of a few obscure joints; and again it is very broad and nearly complete. So variable is the species that at least four genera and two suborders have been formed for its reception, and, though Hooker placed it at the end of *Pterideae*, its proper position among Ferns is by no means settled. Dr. Garber has as yet found only sterile plants, and it is to be hoped that he may be successful in his search for fruiting fronds.

13. *Cheilanthes microphylla*, Swartz.—In the BULLETIN for May, 1875, I stated that this species was collected many years ago on the Mexican Boundary, but had not been received a second time from anywhere within our limits. Mr. A. H. Curtiss, has now discovered it, growing in considerable abundance, on old shell-heaps on an island near the mouth of the St. John's river, Florida, and will have specimens in his next series of Florida plants.

14. *Asplenium firmum*, Kunze.—Found in a limestone "sink" at Ocala, Florida, by Mr. W. H. Shockley, of New Bedford, Mass., in March last. This is another tropical American fern, which proves to be an inhabitant also of Florida. It has fronds from three to eight inches long, of a firm-membranaceous texture, ovate or oblong in outline, and once pinnate. The pinnae, five to twelve pairs, are variable in shape, being either lanceolate, oblong-ovate, or oval, obtuse, or acuminate, the base more or less excised in the lower side, and truncate (though never auricled) on the upper. The margin is more or less crenated or serrated, the sori moderately elongated, and the rachis slightly winged. The plant is plainly identical with specimens from Kew marked *A. firmum*, and with Fendler's 143 from Venezuela. Concerning the proper specific name there is a good deal of doubt and confusion, which can scarcely be cleared away at present. Mr. Baker considers the species identical with part of Willdenow's *A. abscissum*, and calls the species by that name, and Mettenius seems to have been of the same opinion. But see Hooker's Species Filicum, iii, p. 135.

15. *Asplenium cicutarium*, Swartz.—Found by Mr. Shockley on or by limestone rocks near Lake Panasopkee, Sumter Co., Florida. The fronds are from a few inches to a foot and a half long (in

tropical specimens) and are tripinnate, with winged primary and secondary rachises, and more or less deeply pinnatifid pinnules; the ultimate lobes or teeth having but a single veinlet. The relationship of the plant is to *A. myriophyllum* of Presl, which Hooker has considered to be a variety of *A. rhizophyllum*, but the present fern has less dissected, broader, and more rigid fronds. It is a common species in the West Indies, and in several countries of South America. Mr. Shockley also collected *A. myriophyllum* in Florida, not far from the place where he discovered *A. firmum*.

NEW HAVEN Oct. 12, 1878.

D. C. EATON.

I am not responsible for a very stupid blunder in one of the last plates of my Fern Book, where "*Polopodium vulgare*" is printed under a figure of Pol. Scouleri, and again *Schizaea* is put "*Shizaea*."

D. C. E.

§ 264. ***Calluna vulgaris* in New Jersey.**—By the kindness of Dr. Hexamer in a letter to Mr. Isaac C. Martindale, Mr. Charles F. Parker, one of the Curators of the Academy of Natural Sciences of Philadelphia, and I were very very well directed to the exact spot where the *Calluna vulgaris* is growing, about two miles from Egg Harbor City, New Jersey. The appearances are very well calculated to create a first impression that it is indigenous. There is but a single plant, but it has been growing there some years, and the sand has blown in among the branches, and these have rooted, giving the appearance of a mass of plants. All the main branches are what a gardener would call "fan shaped," showing that it was originally planted there,—a bunchy plant having been pressed against a flat surface, as in planting a garden edge of dwarf box. Not far from the plant is a hole, which, though among scrub oak and bushes, might have been intended for a cellar for a small house and from the bottom of which came out a nearly dead peach tree. I could see that the tree was probably eight or nine years old, and I knew the Peach was not indigenous. It led me to inquire, and I found that some twelve years ago a man named Habersak came to those parts from England and intended to build a little house; that he could not pay the ground rent, and went off and left for parts unknown. It is a very common thing for foreigners to bring the heather with them. On the Atlantic last year I saw not a few with these treasures carefully looked after in moss and in pots. I feel no hesitation in deciding that this plant is not indigenous here. If I am not mistaken in the identity, this Mr. Habersak was located near Warrenton, Virginia, four or five years ago, and no doubt, if any one could find him, the exact date of the planting could be got.

Considering how easy it is to be deceived, would it be worth while to go over again the circumstances surrounding other American localities for this plant? One thing we may be sure of, this plant has been brought over from Europe by emigrants for a hundred years or more past. Some would have no place of their own suitable to grow it, would be very likely to "stick it in" somewhere, and, when they left, no one would know of it, as in this case. It will at